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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,942	02/25/2002	Tac-Kwang Park	2007	5012

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EXAMINER

TRAN, HENRY N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/082,942	Applicant(s) PARK ET AL.	
	Examiner HENRY N TRAN	Art Unit 2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11-16 and 19-44 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8, 11-16, 19-21, 29-31, 33, 36, 39 and 42-44 is/are rejected.
7) ☒ Claim(s) 22-28, 32, 34, 35, 37, 38, 40 and 41 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/2/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the applicants' amendment received 7/2/04. The amendments to the claims have been entered. Claims 1-8, 11-16 and 19-44 are pending in this application. Applicant's remarks have been fully considered, with the results set forth as follows.

Priority

1. Applicant's claim for domestic priority under 35 U.S.C. 119(e) of the United State provisional application no. 60/271,452 is acknowledged. The provisional application papers have been placed of record in the file.

Information Disclosure Statement

2. The examiner has considered the references submitted with the information disclosure statement (IDS) received 7/2/04 (see the attached form PTO-1449).

Oath/Declaration

3. The supplemental oath or declaration received 4/2/04 has been considered and placed of record in the file.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 11-16, 19-21, 29-31, 33, 36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurumisawa et al (U.S. Patent No. 6,252,572, hereinafter referred to as "Kurumisawa") in view of Iino et al (U.S. Patent No. 6,483,497, hereinafter referred to as "Iino").

6. Regarding claims 14, 15, 21, 29, 30, 43 and 44, Kurumisawa teaches multi-line scanning (MLS) drive methods and an apparatus for driving a Super Twisted Nematic (STN) Liquid Crystal Display (LCD), comprising: a LCD panel 2250 having N number of scan lines, $X_1 \sim X_n$, and M number of column lines, $Y_1 \sim Y_m$, wherein N and M are each integers greater than 1; a row driver, which is the X driver 2200, for selecting a scan block defined by a number of the scan lines, h, to be simultaneously driven; a column driver, which is the Y Driver 2100, for driving the column lines, see fig. 53, and col. 5, lines 49-52; a display data memory, which is a frame memory, or RAM 252, arranged in a matrix of $m \times n$ memory cells, C, and is sufficient for one frame; the display data corresponding to the selected h scan lines are retrieved or written into the frame memory 252 simultaneously, see col. 2, lines 12-16; the display data corresponding to the selected h scan lines are outputted at the same time or "concurrently", see figs 2 and 8; and col. 12, lines 43-46; and a column signal circuit, which is the decoder 258, for generating column display signals by modifying the concurrently output display data, see figs 19 and 20; and col. 16, lines 13-26. Kurumisawa also teaches the use of the Shift Register 2021, as illustrated in fig. 8, or the Latch Circuit 261, as illustrated in figs. 19 and 20, for concurrently outputting display data corresponding to h number of the selected scan lines and a plurality number of column lines. However, Kurumisawa does not expressly teach that the display data stored in a scan block of the display data memory, the scan block being a part of the display data memory and

Art Unit: 2674

corresponding to h scan lines and all the column lines, or a plurality of column lines associated with the LCD panel. Iino teaches an apparatus for driving a LCD 1, comprising: a scan driver 1 for selecting a plural scan electrodes, X_n ; a column driver 2 for driving the column lines, Y_m ; a frame memory 3 for storing display data; wherein, row scan lines are grouped into j groups, each of the group comprises a number of scan lines, i , to be simultaneously selected and driven; and at the same time, column voltages are applied to each column electrode, Y_1 to Y_m , see figs. 4-6; col. 7, lines 8-29; and col. 17, lines 29-61. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of output display data corresponding to a plural selected scan lines as well as all the column lines as taught by Iino in the modified Kurumisawa device, which is modified by using a multi-port frame memory instead of the frame memory 252 and the shift register 2021 (as shown in fig. 8) because this would provide an improved MLS driving apparatus, which uses less part, less memory, and less power consumption for faster and high quality display images. By this rationale, claims 14, 15, 21, 29, 30, 43 and 44 are rejected.

7. Regarding claims 16, 19, 20, 31, 36 and 39, Kurumisawa further teaches: the number of scan lines simultaneously selected is $h = 3$, see col. 9, line 46. Iino further teaches the number of scan lines of the scan block, which are simultaneously selected, are adjacent to one another, see figs 1A, 1b, or 11A and 11B; the monochrome in gray scale or gradation displays, see col. 34, line 44. Claims 16, 20, 31, 36 and 39 are dependent upon the base claims 14 and 29, and are therefore rejected on the same basis set forth in claims 1, 14 and 19, and by the reasons discussed above.

Art Unit: 2674

8. Regarding claims 1, 11-13, 33 and 42, which are method claims corresponding to the apparatus claims 14, 19-21, 39 and 44, respectively, and are therefore rejected on the same basis set forth in claims 14, 19-21, 39 and 44 discussed above.

9. Regarding claims 2-8, Kurumisawa further also teaches the method steps of: applying orthogonal function data, see col. 7, lines 3-9; performing exclusive OR operation, see col. 16, lines 38-43; decoding the results of the exclusive OR operations using the decoder 258; shifting the data level using the level shifter 259, see fig. 20; generating column display signals using voltage selector 260 using $k=2$ voltage levels, see figs. 39A. Claims 2-8 are dependent upon the base claim 1, and are therefore rejected on the same basis set forth in claim 1, and by the reasons noted above.

Allowable Subject Matter

10. Claims 22-28, 32, 34, 35, 37, 38, 40 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are U.S. Patents Nos.: 6,611,246; 5,877,738; and 5,852,429 that teach methods and apparatuses for driving LCD systems.

Art Unit: 2674

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

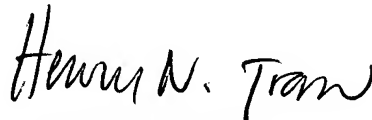
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **HENRY N TRAN** whose telephone number is 703-308-8410. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached on 703-305-4709. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2674

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Henry N. Tran". The signature is written in a cursive, flowing style.

HENRY N TRAN
Primary Examiner
Art Unit 2674

12/8/04